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MATURATION OF THE EGGS OF DIEMYCTILUS TOROSUS.

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During my stay in California, where the Belgian government sent me to verify the results of Dr. Eisen's investigations on the testicles of the Batracoceps, and to study the eggs of these and other Batrachians, the occasion also offered itself to study the maturation process in *Diemyctilus torosus.*

I knew, by the work of Professor Ritter, of the University of California, that the copulation of this species takes place during the months of March and April, and therefore immediately devoted my investigations to this subject. My material came from Tocoloma, Marin County, California, where Professor Van der Naillen called my attention to a large quantity of specimens. In my previous publications, I have shown it to be absolutely necessary to have the largest possible number of specimens on hand to have good material in the different stages of the maturation of the eggs, because these phenomena last only a few days, and during this period, it is necessary to kill a large quantity of females. All of these conditions are perfectly realized in Tocoloma.

By the kindness of the San Francisco Microscopical Society, which generously opened to me its rooms and instruments, I began to study the material collected, and demonstrated my preparations at a meeting of the Society on the 15th of May.

As the present note is preliminary and a summary of the researches made in California, my investigations will be continued in Europe and published in the review (La Cellule).

The ovary of *Diemyctilus* contains from five to six species of eggs in different stages of development. I will not attempt to detail the history of these eggs from ovogony to the maturation stage, but will only state that, as a result of my investigations, I have found absolute confirmation of my researches on European urodels and on Siredon.

I will here limit my references to the process of the maturation of the egg.

When the egg is ripe, the nucleus is situated at the animal pole, voluminous, and contains four to five hundred chromatic nucleoles, in various stages of dissolution, and resolving into granula. The first appearance of maturation is the vacuolization of the karyoplasma and the dissolution of all the granular chromatin, except a little quantity of nucleoles. These have in this stage a propensity to fuse together. Shortly, the membrane of the nucleus disappears, and during this stage, the chromatic element is represented in the egg by spherical nucleoles and by masses made by fusion of other nucleoles.

All these phenomena are finished in the ovaries. When the egg is found in the peritoneum the spindle of the first polar body is finished and the chromosomes fixed on the spindle. These are formed in a small region of karyoplasma which is not invaded by the cytoplasmic inclusions after the disappearance of the nuclear membrane. There are no centrosomes, but beautiful asters. The filaments of these orders are crossed on the equatorial plane of the figure as is known, by *Batrachoceps* (Eisen), by pollen-mutter cells (Osterhout and his pupils) and tritons (Lebrun). The first figure and the expelling of the first polar body is finished in the superior part of the oviduct. The second figure runs out during the egg's passage through the oviduct to the cloaca. The chromosomes are twelve as in the other urodels. They are quadripartite as in the first polar figure and have the form of a cross, resembling those found in European tritons and called "oiselets." I will not, by this, say that I give to these forms the same signification as do Von Rath, Haecker, and others. On the contrary, I conclude that in the two figures the chromosomes divide longitudinally in the equatorial plane.

SAN FRANCISCO, CAL., May 15, 1901.